

## ABSTRACT

An optical fiber which, at an optical fiber connecting end having a plurality of voids around the periphery of a core, has a light-permeable substance, such as a resin or glass whose refractive index is lower than that of quartz type substances, filled in the voids adjacent to the connecting end. An optical fiber connecting section where an optical fiber having a plurality of voids in a clad around the periphery of a core is connected to another optical fiber, wherein the optical fiber is connected end-to-end to aforesaid another optical fiber through a refractive index matching agent whose refractive index at the minimum temperature in actual use is lower than that of the core.